

Claims (clean version encompassing amendments)

What is claimed is:

1. An *in vitro* method which comprises labelling a biological molecule with hyperpolarised ^{129}Xe , and observing a magnetic resonance (NMR) spectrum and/or NMR image of the hyperpolarised ^{129}Xe in the environment of the biological molecule.
2. The method of claim 1 wherein the biological molecule is an assay reagent taking part in an assay method.
3. The method of claim 2 wherein the assay is a competition assay or an immunoassay.
4. The method of claim 2 wherein the assay is a hybridisation assay or a binding assay.
5. (once amended) The method of claim 1 wherein the biological molecule is a peptide or a protein.
6. (once amended) The method of claim 1 wherein the hyperpolarised ^{129}Xe is enriched at a level of 40% or more.

7. (once amended) The method of claim 1 wherein the degree of hyperpolarisation is 8% or more.
8. (once amended) The method of claim 1 which is performed in a solution wherein the solvent has a viscosity in the range of 700 to 1500 mPs.
9. (once amended) The method of claim 1 wherein the pressure of the xenon gas is at least 5 bar.